Stationary Combustion Turbine Work Group
Status Report to the ICCR CC
February 10, 1998

I. Meetings and Teleconferences

Since the last status report dated November 7, 1997, the Combustion Turbines Work Group (CTWG) met on November 20, 1997, for a one day meeting in Houston, TX and on December 10, 1997 and January 21, 1998 for two hour teleconferences.

II. Status

At the November CC meeting, the CTWG presented the list of pollutants to test for by fuel type to the CC. Closure was reached on the list of pollutants to test for; however, consensus was not reached on the pollutant list for landfill gas. Therefore, majority and minority opinions were both presented to the CC. The CC recommended elevating the non-consensus issue to the EPA level and created a six person subgroup to draft a position paper. CTWG members Ted Guth, Greg Adams, and Sims Roy served on this group. This group came to closure on this paper, and it was submitted to EPA for resolution.

Summaries of the activities and status of the CTWG task groups since the last report to the CC are listed below:

(I)- EPA Database and Enhancement Task Group- This task group is responsible for reviewing/enhancing the Stationary Combustion Turbine Population and Emissions Databases. The activities conducted on each database are presented below.

Population Database:

No new activities were conducted on the population database. The final database was completed according to schedule. The database will be utilized in the future when needed.

Emissions Database:

The emissions database was posted on the TTN on January 8, 1998, ahead of the schedule set forth in the Combustion Turbines MACT Development Timeline. The "Test Data" table was subdivided into three sections: 1) HAPs emissions data, 2) criteria emissions data, and 3) tests with both HAPs and criteria emissions data.

Facilities which indicated they have HAPs data for gas turbines in the Boiler and Incinerator ICR are currently being contacted for complete copies of their HAP test reports. If any reports are found through this process, they will be reviewed and added to the emissions database if they meet the acceptance criteria.

(II)- Subcategory Analysis Task Group- This task group was merged with the Model Plant Task Group during the Model Plant Task Group's December 13, 1997 teleconference. (See Section VII)

(III) HAP Reduction Technology Task Group- No new activities were conducted under this task group since the last report to the CC.

(IV) HAP vs. Criteria Pollutant Task Group- The task group held a teleconference on November 13, 1997. The group's review of the existing data suggest that NOx control by steam injection causes an increase in formaldehyde. However, the group indicated that due to the limited data that are available on HAPs vs. NOx, the strength of this relationship warrants further investigation. It was found that CO is a good indicator of combustion conditions, but no trend relating CO to HAPs could be identified. Low CO appears to correspond to good combustion and low HAPs, but high CO does not necessarily mean high HAPs. Therefore, it was agreed that CO may not be a reliable surrogate for HAPs.

Charles Chang resigned as chair of the task group at the November teleconference. The task group decided not to appoint a new chairperson because the task group has gone as far as it can in analyzing this issue at this time. The task group decided that they would meet on an ad hoc basis in the future if needed. Trade-off issues between HAPs and criteria pollutants that arise when developing MACT will be discussed at that time.

(V) Test Methods Monitoring and Testing Task Group- The list of pollutants to be measured by fuel type was developed by the task group and presented to the CC at the November meeting. Closure was reached on the recommended list of pollutants to measure from turbines for each fuel type. Consensus was reached on not including dioxin on the HAP list for each fuel except landfill gas. For landfill gas, there was a non-consensus on whether dioxin should be tested. The minority and majority positions were presented to the CC at the November meeting concerning the inclusion of dioxin on the pollutant list for turbines firing landfill gas. This issue could not be resolved by the CC and was sent to EPA for resolution.

At the November CTWG meeting, the task group distributed a preliminary draft testing protocol to WG members. CTWG members submitted comments on the test plan. In addition, comments were received from Terry Harrison of EPA's Emission Measurement Center and additional comments are anticipated from the Testing and Monitoring Protocol Work Group. Prior to the CTWG meeting in February, a revised test plan, including the incorporation of WG members' comments, will be e-mailed to WG members with draft responses to the comments received from both Terry Harrison and the TMPWG.

Current and future activities of the the task group include submitting the testing protocol to the TMPWG for cost estimates and conducting source testing. The task group will be establishing a process by which to select factilities for testing should no facilities volunteer. Many members have expressed concern that it will be difficult to elicit volunteers for testing unless protection against enforcement for non-compliance during testing is guaranteed. This possibility is currently being investigated.

The task group provided comments to API and GRI concerning their upcoming plans to test a gas turbine. Changes were made in the testing program that take into consideration requests made by the task group. The test will occur during the first week in March, 1998. Task

group members Gordon Brown and Sims Roy plan to attend the test.

(VI) MACT Floor Task Group- The task group held a teleconference on December 17, 1997 to discuss the preliminary MACT floor determination. Sims Roy presented the draft MACT floor for existing sources to task group members and to other guests. A narrative is currently being prepared to document the rationale used develop at the preliminary MACT floor.

The task group held another teleconference on January 16, 1998. Task group members questioned the practicality of imposing an emission limit as the MACT floor for turbines. The legal obligation and rationale mandating that an emission limit be set as the MACT floor is currently being reviewed by OGC. In addition, the MACT floor development process being followed by other source work groups is being investigated by the CTWG. A teleconference was held on January 27, 1998 in which Fred Porter discussed the Process Heater Work Group's (PHWG's) approach in developing a numerical MACT floor limitation. CTWG members agreed in principle that they could support the PHWG's MACT Floor development process and would sit at the table during the PHWG's MACT Floor presentation at the February CC meeting.

(VII) Model Plant Development Task Group- On December 16, 1997, the task group met via teleconference with the Economic Analysis Work Group (EAWG) to discuss and understand their data needs (reference: Table 1 and 2 of October 29, 1997 memo from Mike Gallaher to Sims Roy). Many questions were answered in terms of scope of effort, level of detail, and how costs are developed. The task group will develop control costs for each model plant and then be prepared to work with EAWG.

On January 13, 1998, the task group held a teleconference to discuss a draft table of model plants. A list of turbine characteristics were reviewed in terms of their impact on HAP emission control techniques. A short list of characteristics (e.g., unit size, hours of operation, heat recovery, new vs. retrofit) were organized into a matrix of 18 model plants. Each model plant includes typical applications and surrogate turbine make/models for future economic analysis. The model plant documentation, including rationale, is being developed for final review at the February 26, 1998 CTWG meeting.

The Subcategorization Task Group was merged with the Model Plant Task Group during the December 16 teleconference since the goals of each are beginning to overlap.

(VIII) Planning Task Group- The task group revised the WG's Milestone Tracking Summary, which lists the status and schedule for the identified milestones. The task group also revised the MACT Development Time Line, which indicates the current task groups' schedules and the ICCR document schedules. The CTWG MACT Development Timeline and the Milestone Tracking Summary are attached as Attachments A and B, respectively. The task group plans to revise these documents in the future as necessary.

2 Attachments

Attachment A

COMBUSTION TURBINES MACT DEVELOPMENT TIME LINE

Scheduled Item:	Scheduled Date: (Current WG Schedule)	ICCR Document (Original Schedule)
Information Collection		
o Inventory Database		
+ Final Inventory DB	9/30/97	9/97
o Emissions DB		
+ Initial Existing DB	9/30/97	9/97
+ Final Existing DB for uncontrolled sources	3/30/98	9/97
+ Testing Completed & Final Emissions DB for controlled sources	9/98	9/97
MACT Floor (MF) Determination		
o Preliminary MF for existing sources	12/97	9/97
o MF for new sources	9/98	9/97
Dev. of Regulatory Alternatives		
o For existing sources	9/98	2/98
o For new sources	9/98	2/98
Analysis of Alternatives		
o For existing & new sources	11/98	9/98
Selection of Regulatory Alternatives	12/98	9/98
Proposal Signature by Administrator	10/99	10/99

Revision #1
2/10/98

Attachment B

Milestone Tracking Summary

Milestone[1]	ICCR Document Milestone Schedule	Status with Schedule for Completion[2]
Information Collection Inventory Database QA/QC Review of ICCR Emissions Database Emission Testing Recommendations	**1/97-9/97**	**Start Date: 3/97** **Completion Date: 9/98** **Percent Completed: 55%** - The Database Enhancement Task Group completed QA/QC efforts of the Inventory Database in August '97. - The Testing Methods, monitoring, and Testing Task Group completed QA/QA efforts of the Emissions Database (of gathered reports) in August '97. Currently gathering additional test reports from state files and WG members which is expected to be completed by March '98. - Testing to determine HAP control efficiency of control devices to be completed in September '98. The final emissions database for controlled sources is scheduled for completion in September '98 after testing has been completed. - Final list of HAPs to be measured was submitted in November '97. Currently in the process of developing a test plan. Drafted a preliminary estimate of testing needs which will be revised subsequent to finalizing the test plan. Testing recommendations will be completed in March '98.
MACT Floor Determination MACT Floor for Existing Sources MACT Floor for new sources	**9/97-11/97**	**Start Date: 9/97** **Completion Date: 9/98** **Percent Completed: 45%** - Preliminary MACT Floor for existing sources (using the current emissions database) was completed in December '97. MACT Floor for existing sources to be completed in March '98. - MACT Floor for new sources is scheduled for completion in September '98, subsequent to gathering additional source tests and any WG testing efforts.

Milestone[1]	ICCR Document Milestone Schedule	Status with Schedule for Completion[2]
Identification of Regulatory Alternatives Control Technology Assessment Identification of Beyond the Floor Alternatives	**11/97-2/98**	**Start Date: 3/97** **Completion Date: 9/98** **Percent Completed: 25%** - The HAP Reduction Technology Task Group submitted a draft memorandum of Good Operating Practices in May '97. - A Technology Work Shop was held on July 25, 1997, to identify potential HAP control technologies. - An intermediate report listing HAP reduction and prevention technologies is scheduled for submittal in June '98. - Final regulatory alternatives will be submitted in September '98.
Regulatory Analysis Source Subcategorization Model Plant Development Cost Analysis Economic Analysis Emission Reduction Assessment	**3/98-8/98**	**Start Date: 12/97** **Completion Date: 11/98** **Percent Completed: 25%** - The Subcategorization Task Group drafted a memorandum of potential subcategories in July '97. Subcategories may be developed based on model plants analyses. - Initiated efforts in developing model plants. Identified a Model Plants Task Group during the WG's September meeting. Model plant information will be finalized and provided to the Economic Analysis Work Group by March '98. - The WG has not assigned a task group to review Cost Analyses. The WG initiated efforts in conducting literature searches of existing cost data for applicable controls. - Cost analysis for existing and new sources will be completed in May '98. - Economic Analysis and Emission Reduction Assessment is scheduled for completion by November '98.

Milestone[1]	ICCR Document Milestone Schedule	Status with Schedule for Completion[2]
Preliminary Regulatory Recommendations	**9/98**	**Start Date: Not Started** **Completion Date: 12/98** **Percent Completed: 0%** - The HAPs vs. Criteria Task Group is in the process of identifying options for regulatory development. To date, no documentation has been drafted for regulatory options. The task group reviewed information on HAPs vs. Criteria emissions as a function of turbine operating parameters. The test plan includes testing to get more information on this issue. - Selection of Regulatory Alternatives will be completed by December '98.

1 Major milestones are shown in bold type. Some recommended submilestones are also listed.
2 Indicates the current status of the milestone (i.e., whether it has begun, is in data gathering stage, etc.), the expected date to complete the milestone, and, if appropriate, the group or subgroup responsible for completing the milestone.

Revision #1
2/10/98